TSX Series

Applicable Insert: LNEX

NEW

8 mm	0°	12 mm	0°	Rake Angle	Radial	−34°−20°
				LNEX08	Axial	−6°
LNEX 08		LNEX13		Rake Angle	Radial	−31°−15°
				LNEX13	Axial	−6°

P Steel · M Stainless Steel · K Cast Iron · N Non-Ferrous Metal · N Aluminum · S Exotic Alloy · H Hardened Steel

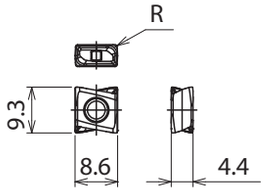
Features & Benefits

- TSX provides superior metal removal rates
- Employs a cost effective 4-corner tough, tangentially mounted insert
- Tangentially mounted insert achieves excellent edge sharpness and cutting ability with optimized chip breaker
- TSX is available in two series offering a max DOC of 8mm (.315") and 12mm (.473") with a variety of body diameter choices
- TSX provides the strength required for increased depths of cut ranging from a small job to a heavy duty roughing application

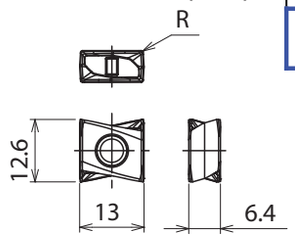
Inserts

Inserts	P			K		M	S	
Cat. No.	ACP100	ACP200	ACP300	ACK200	ACK300	ACM200	ACM300	R
LNEX080404PNER-L	○	○	○	○	○	○	○	.016
LNEX080404PNER-G	○	○	○	○	○	○	○	.016
LNEX080408PNER-L	○	○	○	○	○	○	○	.031
LNEX080408PNER-G	○	○	○	○	○	○	○	.031
LNEX080412PNER-G	○	○	○	○	○	○	○	.047
LNEX080416PNER-G	○	○	○	○	○	○	○	.063
LNEX130604PNER-L	○	○	○	○	○	○	○	.016
LNEX130604PNER-G	○	○	○	○	○	○	○	.016
LNEX130608PNER-L	○	○	○	○	○	○	○	.031
LNEX130608PNER-G	○	○	○	○	○	○	○	.031
LNEX130608PNER-H	○	○	○	○	○	○	○	.031
LNEX130616PNER-G	○	○	○	○	○	○	○	.047
LNEX130616PNER-H	○	○	○	○	○	○	○	.047
LNEX130624PNER-G	○	○	○	○	○	○	○	.094
LNEX130624PNER-H	○	○	○	○	○	○	○	.094
LNEX130632PNER-G	○	○	○	○	○	○	○	.126
LNEX130632PNER-H	○	○	○	○	○	○	○	.126

LNEX08
Max. DOC 8mm (.315")



LNEX13
Max. DOC 12 mm (.473")



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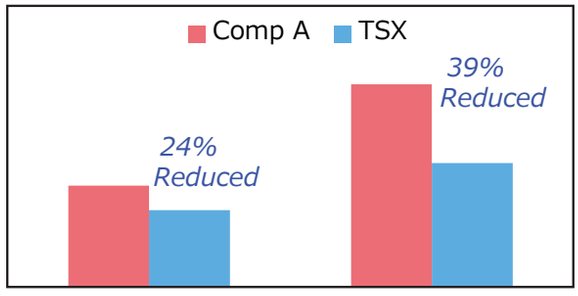
Toughness Comparison

[Cutting Condition]
Material: 1049 Steel, Dry
Vc 490 SFM
fz .024 ipt
ap .118"
ae 1.58"

Fz .024 ipt	4th pass	8th pass	12th pass
Comp A (Tangential)	Brakeage		
Comp B (Tangential)		Breakage	
TSX (LNEX)			No Breakage

Cutting Force Comparison

[Cutting Condition]
Material: 1049 Steel, Dry
Vc 490 SFM
fz .006 ipt
ap .236" & .472"
ae .118"



DOC=6mm (.236") DOC=12mm (.472")

Recommended Running Conditions

ISO	Work Material	Hardness	Cutting Speed v_c(sfm)Min-Max	Feed Rate f_z(ipt) Min-Max	Recommended Grade
P	Carbon Steel	180-280 HB	500-1000	.004-.014	ACP200 ACP300 ACP100
		> 280 HB	250-750	.004-.014	
	Alloy Steel	180-280HB	330-815	.004-.012	
M	Stainless Steel	220-280HB	300-600	.004-.010	ACM300 ACM200
		> 280HB	250-550	.004-.010	
S	Exotic Material	-	100-300	.004-.008	ACM300 ACM200
K	Cast Iron/Ductile Cast Iron	250HB	330-815	.004-.014	ACK300 ACK200

NOTE: The cutting conditions above are a guide. Actual conditions will need to be adjusted according to machine rigidity, work clamp rigidity, cutting depth and other factors.

Hardware

Insert Size	Catalog Number	Insert Screw	Wrench	Recommended Tightening Torque
				
TSX3000 (LNEX08)	TSX□30625□	BFTX0306IP	TRDR08IP	2.0Nm
	TSX□30750□~TSX□32500□	BFTX0308IP		
TSX4000 (LNEX13)	TSX□41000□~TSX□44000□	BFTX03510IP	TRDR15IP	3.0Nm

8 mm	0°	12 mm	0°
LNEX 08		LNEX13	

Rake Angle LNEX08	Radial	−34°−20°
	Axial	−6°
Rake Angle LNEX13	Radial	−31°−15°
	Axial	−6°

P Steel | M Stainless Steel | K Cast Iron | N Non-Ferrous Alloy | N Aluminum | S Exotic Alloy | H Hardened Steel

NEW

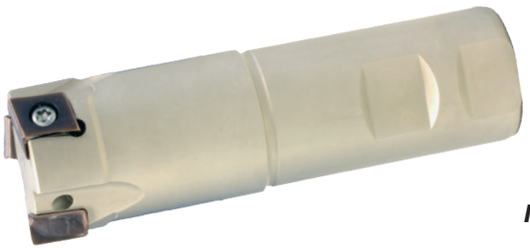
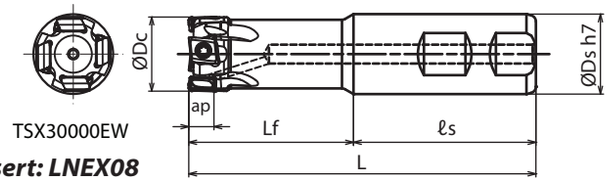


Fig. 1



TSX30000EW

Insert: LNEX08

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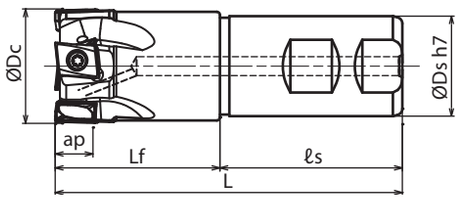
TSX Endmill - INCH									***Insert: LNEX08 Type***
Cat. No.	**Stock**	**Dimensions (in.)**					**No. of Teeth**	**Weight (lbs)**	**Fig.**
		øDc	**øDs**	**Lf**	**ℓs**	**L**			
TSX30625EW	○	0.625	0.625	1.312	1.906	3.218	2	0.22	1
TSX30750EW	○	0.750	0.750	1.534	2.030	3.563	2	0.35	1
TSX31000EW	○	1.000	1.000	2.060	2.281	4.341	3	0.88	1
TSX31250EW	○	1.250	1.250	2.060	2.281	4.341	3	1.32	1
TSX31500EW	○	1.500	1.250	2.060	2.281	4.341	4	1.54	1
TSXF30750EW	○	0.750	0.750	1.534	2.030	3.563	3	0.44	1
TSXF31000EW	○	1.000	1.000	2.060	2.281	4.341	4	0.88	1
TSXF31250EW	○	1.250	1.250	2.060	2.281	4.341	5	1.32	1
TSXF31500EW	○	1.500	1.250	2.060	2.281	4.341	6	1.54	1
TSX Endmill - INCH									***Insert: LNEX13 Type***
TSX41000EW	○	1.000	1.000	2.060	2.281	4.341	2	0.66	2
TSX41250EW	○	1.250	1.250	2.060	2.281	4.341	2	1.32	2
TSX41500EW	○	1.500	1.250	2.060	2.281	4.341	3	1.54	2
TSXF41250EW	○	1.250	1.250	2.060	2.281	4.341	3	1.32	2
TSXF41500EW	○	1.500	1.250	2.060	2.281	4.341	4	1.54	2

Fig. 2

TSX40000EW

Insert: LNEX13



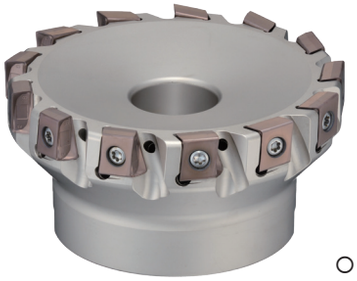


Fig. 1

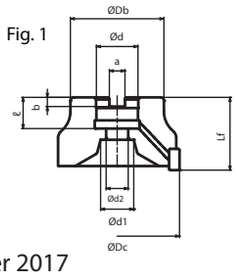
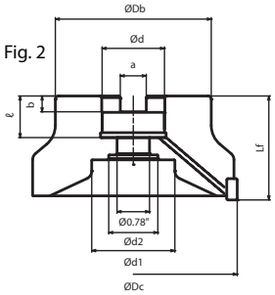


Fig. 2



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TSX Shell Mill - INCH													***Insert: LNEX08 Type***
Cat. No.	**Stock**	**Dimensions (in.)**									**No. of Teeth**	**Weight (lbs)**	**Fig.**
		øDc	**øDb**	**Lf**	**ød**	**a**	**b**	**ℓ**	**ød1**	**ød2**			
TSX31500R	○	1.500	1.339	1.750	0.750	0.312	0.190	0.750	0.609	0.406	4	0.44	1
TSX32000R	○	2.000	1.500	1.750	0.750	0.312	0.190	0.750	0.609	0.406	5	0.88	1
TSX32500R	○	2.500	1.750	1.750	1.000	0.375	0.220	0.750	0.797	0.531	6	1.10	1
TSXF31500R	○	1.500	1.339	1.750	0.750	0.312	0.190	0.750	0.609	0.406	6	0.44	1
TSXF32000R	○	2.000	1.500	1.750	0.750	0.312	0.190	0.750	0.609	0.406	8	0.88	1
TSXF32500R	○	2.500	1.750	1.750	1.000	0.375	0.220	0.750	0.797	0.531	10	1.10	1
TSX Shell Mill - INCH													***Insert: LNEX13 Type***
TSX41500R	○	1.500	1.339	1.750	0.750	0.312	0.190	0.750	0.609	0.406	4	0.44	1
TSX42000R	○	2.000	1.500	1.750	0.750	0.312	0.190	0.750	0.609	0.406	5	0.66	1
TSX42500R	○	2.500	1.750	1.750	1.000	0.375	0.220	0.750	0.797	0.531	6	1.10	1
TSX43000R	○	3.000	2.250	1.750	1.000	0.375	0.220	0.750	0.797	0.531	7	1.76	1
TSX44000R	○	4.000	2.870	2.000	1.500	0.625	0.380	1.000	2.000	0.781	9	4.85	2
TSX45000R	○	5.000	3.750	2.500	1.500	0.625	0.380	1.000	2.000	0.781	12	7.50	2
TSX46000R	○	6.000	4.380	2.500	1.500	0.625	0.380	1.000	2.000	0.781	14	11.0	2
TSXF41500R	○	1.500	1.339	1.750	0.750	0.312	0.190	0.750	0.609	0.406	5	0.44	1
TSXF42000R	○	2.000	1.500	1.750	0.750	0.312	0.190	0.750	0.609	0.406	6	0.66	1
TSXF42500R	○	2.500	1.750	1.750	1.000	0.375	0.220	0.750	0.797	0.531	8	1.10	1
TSXF43000R	○	3.000	2.250	1.750	1.000	0.375	0.220	0.750	0.797	0.531	10	1.76	1
TSXF44000R	○	4.000	2.870	2.000	1.500	0.625	0.380	1.000	2.000	0.781	13	4.85	2